

What is claimed is:

1. A method of connecting at least two users to exchange network packets via an internetwork, each user being addressable within said internetwork at a
5 respective global address, and wherein some users of said internetwork are connected to said internetwork via a respective firewall, said method comprising the steps of:

maintaining in a central server coupled to said internetwork a database of registered users, said database including respective global addresses corresponding to said registered users;

10 receiving a call request from a calling user to establish a connection to exchange network packets with a called user, at least said called user being a registered user;

detecting whether a respective firewall is in place between said called user and said internetwork; and

15 if a respective firewall is not in place between said called user and said internetwork, then:

transmitting said called user's respective global address to said calling user; and

20 said calling user establishing a network session for said connection with said called user by transmitting to said called user's respective global address.

2. The method of claim 1 further comprising the steps of:

25 if a respective firewall is in place between said called user and said internetwork, then:

detecting whether a respective firewall is in place between said calling user and said internetwork; and

if a respective firewall is not in place between said calling user and said internetwork, then:

transmitting said calling user's respective global address to said called user; and

said called user establishing a network session for said connection with said calling user by transmitting to said calling user's respective global address.

3. The method of claim 2 further comprising the steps of:

if a respective firewall is in place both between said called user and said internetwork and between said calling user and said internetwork, then relaying through said central server all packets exchanged between said calling user and said called user during said connection.

4. The method of claim 1 further comprising the step of:

receiving respective activation messages from each of said registered users at times when they become available for connecting to other users.

5. The method of claim 4 wherein a presence of a firewall is detected after receiving said respective activation messages, and wherein said database stores data indicating whether said respective firewall is detected for each respective active user or not.

6. The method of claim 5 wherein said central server transmits periodic messages to each respective active user for which a firewall is detected in order to maintain an open network session.

7. The method of claim 1 wherein said central server transmits periodic messages to each respective active user in order to maintain an open network session with each respective active user.

8. The method of claim 1 wherein said respective firewalls include address translating firewalls for translating between a respective global address of a respective user and a respective local equipment address of said respective user, wherein each of said activation messages includes a respective local equipment address for a respective user, and wherein said firewall detecting step is comprised of comparing said
5 respective global address and said respective local equipment address, a firewall being detected when said respective global address and said respective local equipment address do not match.

10 9. The method of claim 1 wherein said respective global addresses each include an IP address and port number.

15 10. The method of claim 1 wherein said database further includes a respective telephone number associated with each registered user, and wherein said call request identifies said called user by a respective telephone number.

20 11. The method of claim 10 wherein a telephone call is established over a public switched telephone network between said calling user and said called user simultaneously with said connection for exchanging network packets.

25 12. A central server coupled to an internetwork providing a real-time, network interconnection service for enabling at least two users to exchange network packets via said internetwork, wherein each user is addressable within said internetwork at a respective global address, and wherein some users of said internetwork are connected to said internetwork via a respective firewall, said central server comprising a programming sequence for:

maintaining a database of registered users, said database including respective global addresses corresponding to said registered users;

receiving a call request from a calling user to establish a connection to exchange network packets with a called user, at least said called user being a registered user;

detecting whether a respective firewall is in place between said called user and said internetwork; and

if a respective firewall is not in place between said called user and said internetwork, then transmitting said called user's respective global address to said calling user so that said calling user can establish a network session for said connection with said called user by transmitting directly to said called user's respective global address.

13. The central server of claim 12 further comprising programming to:

when a respective firewall is detected between said called user and said internetwork, then detecting whether a respective firewall is in place between said calling user and said internetwork, and if a respective firewall is not in place between said calling user and said internetwork, then transmitting said calling user's respective global address to said called user so that said called user can establish a network session for said connection with said calling user by transmitting directly to said calling user's respective global address.

14. The central server of claim 13 further comprising programming to:

when a respective firewall is in place both between said called user and said internetwork and between said calling user and said internetwork, then relaying through said central server all packets exchanged between said calling user and said called user during said connection.

15. Server software for a real-time, network interconnection service for enabling at least two users to exchange network packets via an internetwork, wherein each user is addressable within said internetwork at a respective global address, and wherein some users of said internetwork are connected to said internetwork via a

respective firewall, said server software embodied on a computer-readable medium and, when executed by a computer, operable to:

maintain a database of registered users, said database including respective global addresses corresponding to said registered users;

5 receive a call request from a calling user to establish a connection to exchange network packets with a called user, at least said called user being a registered user;

detect whether a respective firewall is in place between said called user and said internetwork; and

10 if a respective firewall is not in place between said called user and said internetwork, then transmit said called user's respective global address to said calling user so that said calling user can establish a network session for said connection with said called user by transmitting directly to said called user's respective global address.

15 16. The server software of claim 15 further operable to:

when a respective firewall is detected between said called user and said internetwork, then to detect whether a respective firewall is in place between said calling user and said internetwork, and if a respective firewall is not in place between said calling user and said internetwork, then to transmit said calling user's respective
20 global address to said called user so that said called user can establish a network session for said connection with said calling user by transmitting directly to said calling user's respective global address.

17. The server software of claim 16 further operable to:

25 when a respective firewall is in place both between said called user and said internetwork and between said calling user and said internetwork, then to relay through said server all packets exchanged between said calling user and said called user during said connection.